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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,733	08/13/2001	Masaaki Nishijima	NAK1-BP73	7355

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06/19/2002

Joseph W. Price
PRICE, GESS & UBELL
2100 S.E. Main St. Ste.250
Irvine, CA 92614

EXAMINER

MANDALA, VICTOR A

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,733

Applicant(s)

NISHIJIMA, MASAOKI

Examiner

Victor A Mandala Jr.

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 10-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-9, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Examiner has noted that the applicant has responded to the election restriction from the last communication response. The applicant has elected Species III, of Figures 3A-3C, claims 7-9 and newly drafted claims 27 and 28 for further examination without traverse. Therefore the election requirement is made final.

Drawings

2. Figures 8A-8D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-9, 27, and 28 recites the limitation "the first wiring metal layer and the wiring metal layer" in claims 7-9, 27, and 28, (the highlighted terms). There is insufficient antecedent basis for this limitation in the claim.

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3. Referring to claim 7, an RF passive circuit comprising: a semiconductor substrate; a via hole which is formed by applying a metal film on an inside wall of a hole provided through the semiconductor substrate; a wiring metal layer which is formed on a main surface of the semiconductor substrate and is electrically connected to the via hole; and an inductor which is made of a metal film in a spiral pattern and is formed on **the, (a ??), first wiring metal layer** with a dielectric layer there between.
4. Referring to claim 8, an RF passive circuit wherein, **the, (first??), wiring metal layer** is in the same parallel pattern as the inductor.
5. Referring to claim 9, an RF choke used in at least one of a matching circuit and a bias feeding circuit, both circuits being included in an RF amplifier, the RF choke comprising: a semiconductor substrate where at least one of the matching circuit and the bias feeding circuit is incorporated; a via hole which is formed by applying a metal film on an inside wall of a hole provided through the semiconductor substrate; a wiring metal layer which is formed on a main surface of the semiconductor substrate and is electrically connected to the via-hole; and an inductor which is made of a metal film in a spiral pattern and is formed on **the, (a??), first wiring metal layer** with a dielectric layer there between.
6. Referring to claim 27, an RF passive circuit wherein, **the, (first??), wiring metal layer** is evaporated in a spiral pattern.
7. Referring to claim 28, an RF passive circuit wherein, the main surface has a first layer of an insulated film under **the, (first??), wiring metal layer** and a second layer of a ground metal layer above the via hole that connects **the, (first??), wiring metal layer** to the metal film of the via hole.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7-9, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted prior art.

8. Referring to claim 7, an RF passive circuit comprising, (Applicant's admitted prior art Figures 8A-8D): a semiconductor substrate, (#824); a via hole, (#821), which is formed by applying a metal film, (#827), on an inside wall of a hole provided through the semiconductor substrate, (#824); a wiring metal layer, (#831), which is formed on a main surface of the semiconductor substrate, (#824), and is electrically connected to the via hole, (Applicant's admitted prior art Page 5 Lines 11-14 & with the layer #828 being dielectric and between layer #831 and layer #829 it is apparent that there is an electrical contact with the via); and an inductor, (#830), which is made of a metal film, (Applicant's admitted prior art Page 5 Lines 2-3), in a spiral pattern, (Fig. 8C #830), and is formed on the first wiring metal layer, (#831), with a dielectric layer, (#828), there between.

9. Referring to claim 8, an RF passive circuit wherein, the wiring metal layer, (#831), is in the same parallel pattern as the inductor, (#830 inductor) & (Page 4 Lines 23-24 & Page 5 Lines 1-2).

10. Referring to claim 9, an RF choke used in at least one of a matching circuit, (#808), and a bias feeding circuit, (#807), both circuits being included in an RF amplifier, the RF choke comprising, (Applicant's admitted prior art Figures 8A-8D): a semiconductor substrate, (#824), where at least one of the matching circuit, (#808), and the bias feeding circuit, (807), is incorporated; a via hole, (#821), which is formed by applying a metal film, (#827), on an inside wall of a hole, (#821), provided through the semiconductor substrate, (#824); a wiring metal layer, (#831), which is formed on a main surface of the semiconductor substrate, (#824), and is electrically connected, (Applicant's admitted prior art Page 5 Lines 11-14 & with the layer #828 being dielectric and between layer #831 and layer #829 it is apparent that there is an electrical contact with the via), to the via-hole, (#821); and an inductor, (#830), which is made of a metal film, (Applicant's admitted prior art Page 5 Lines 2-3), in a spiral pattern, (Fig. 8C #830), and is formed on the first wiring metal layer, (#831), with a dielectric layer, (#828), there between.

11. Referring to claim 27, an RF passive circuit wherein, the wiring metal layer, (#831), is evaporated in a spiral pattern, (Applicant's admitted prior art Page 4 Lines 23-24 & Page 5 Lines 1-2).

12. Referring to claim 28, an RF passive circuit wherein, the main surface has a first layer of an insulated film, (#834), under the wiring metal layer, (#831), and a second layer of a ground metal layer, (#826), above the via hole, (#821), that connects the wiring metal layer, (#831), to the metal film, (#827), of the via hole, (#821).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of U.S. Patent No. 6,075,427 Tai et al..

13. Referring to claim 8, an RF passive circuit wherein, the wiring metal layer, (Applicant's admitted prior art Figure 8D #831 & Tai et al. Figure 3 #26), is in the same parallel pattern as the inductor, (Applicant's admitted prior art Figure 8D #831 & Tai et al. Figure 3 #28).

It would be obvious to one skilled in the art to combine the teachings of the Applicant and the teachings of Tai et al. because designing an RF amplifier inductor with the highest possible quality factor, (Q), results in a more efficient MCM operation and the space requirements are greatly reduced, which is the direction of designs. Further information can be found in Tai et al., (Col. 3 Lines 19-26 & Col. 4 Lines 3-14).

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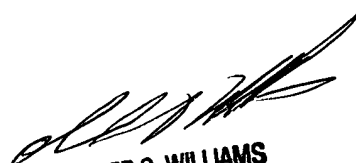
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ
June 12, 2002


ALEXANDER O. WILLIAMS
PRIMARY EXAMINER
